After Sales Technical Documentation

THX–4 Series Transceiver

Chapter 3

TRANSCEIVER OVERVIEW

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CHAPTER 3 – TRANSCEIVER OVERVIEW

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Introduction

The THX–4 series is an advanced analogue handportable cellular telephone for operation on the E–TACS cellular system. The design is fully compatible with the TACS Mobile Station / Land Station specification. The telephone contains many advanced user facilities and is designed for ease of maintenance.

The transceiver consists of two modules: a system module and a display module.

System Module

The system module performs the following functions:

- received audio processing
- transmitted audio processing
- data reception and transmission
- channel selection
- RF signal reception and detection of the modulated information to baseband
- modulation of the baseband microphone and data signal to the selected channel and amplification of the RF signal to the selected power level

The system module contains a microprocessor, which controls the main functions of the phone, and parts of the HW dependent user interface (earphone, microphone, and alarm–beeper).

For convenience the non–RF sub–systems are referred to as the ’Baseband functions’, and the RF sub–systems as the ’RF functions’. Figures 1 and 2 show the rf and baseband functional blocks respectively.

The RF functions provide the RF interface with the cellular system and demodulated audio signals to the analogue sub–system. They also modulate audio signals from the analogue sub–system.

The baseband functions cover both analogue sub–systems (responsible for all audio processing functions) and digital sub–systems (responsible for all digital signal processing functions) and the microcontroller / software (responsible for control and data processing functions).

Display Module

The display module comprises a supertwist–LCD, a display driver and keyboard contacts, volume and on/off switches.

Figure 1: RF Block Diagram

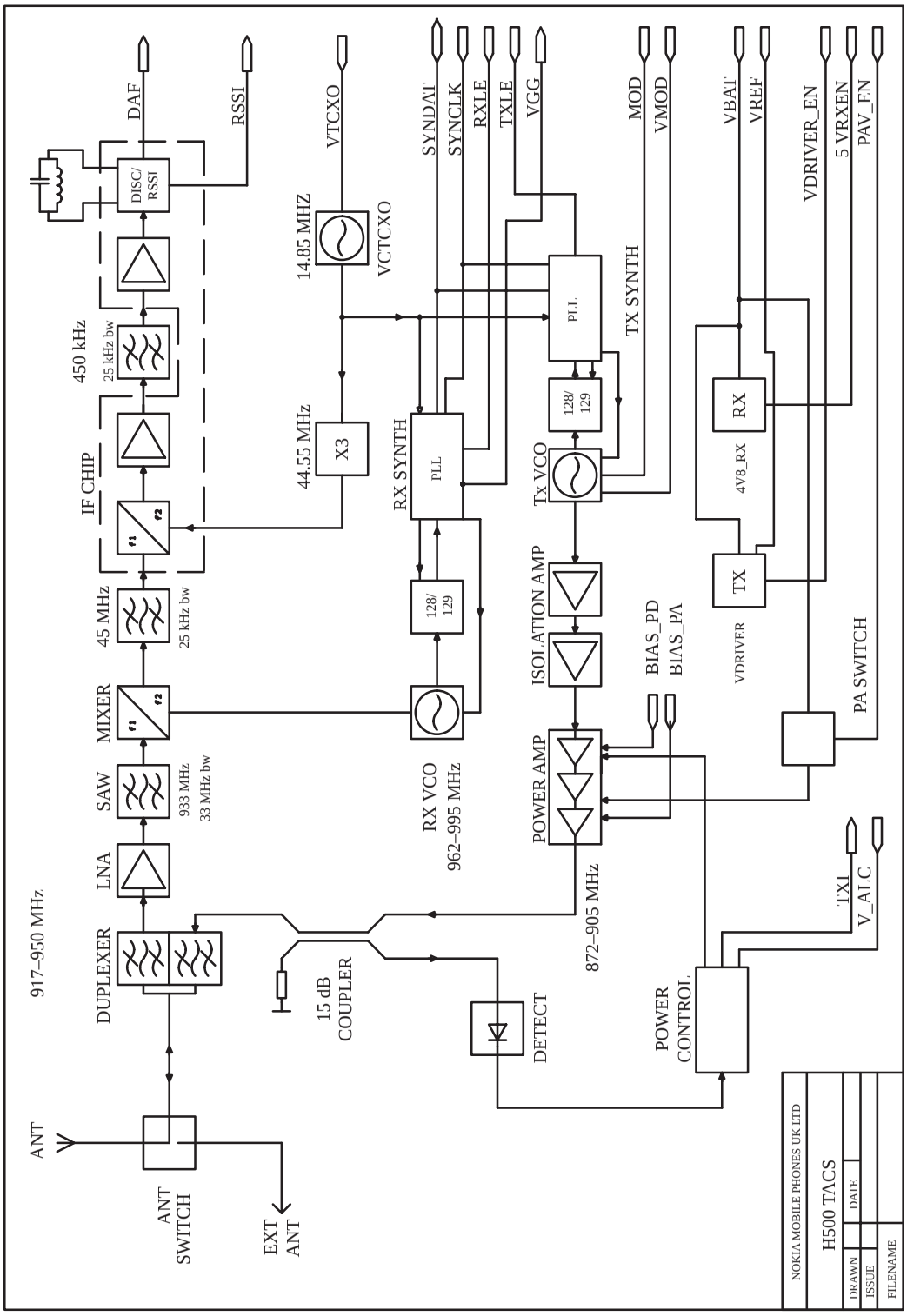
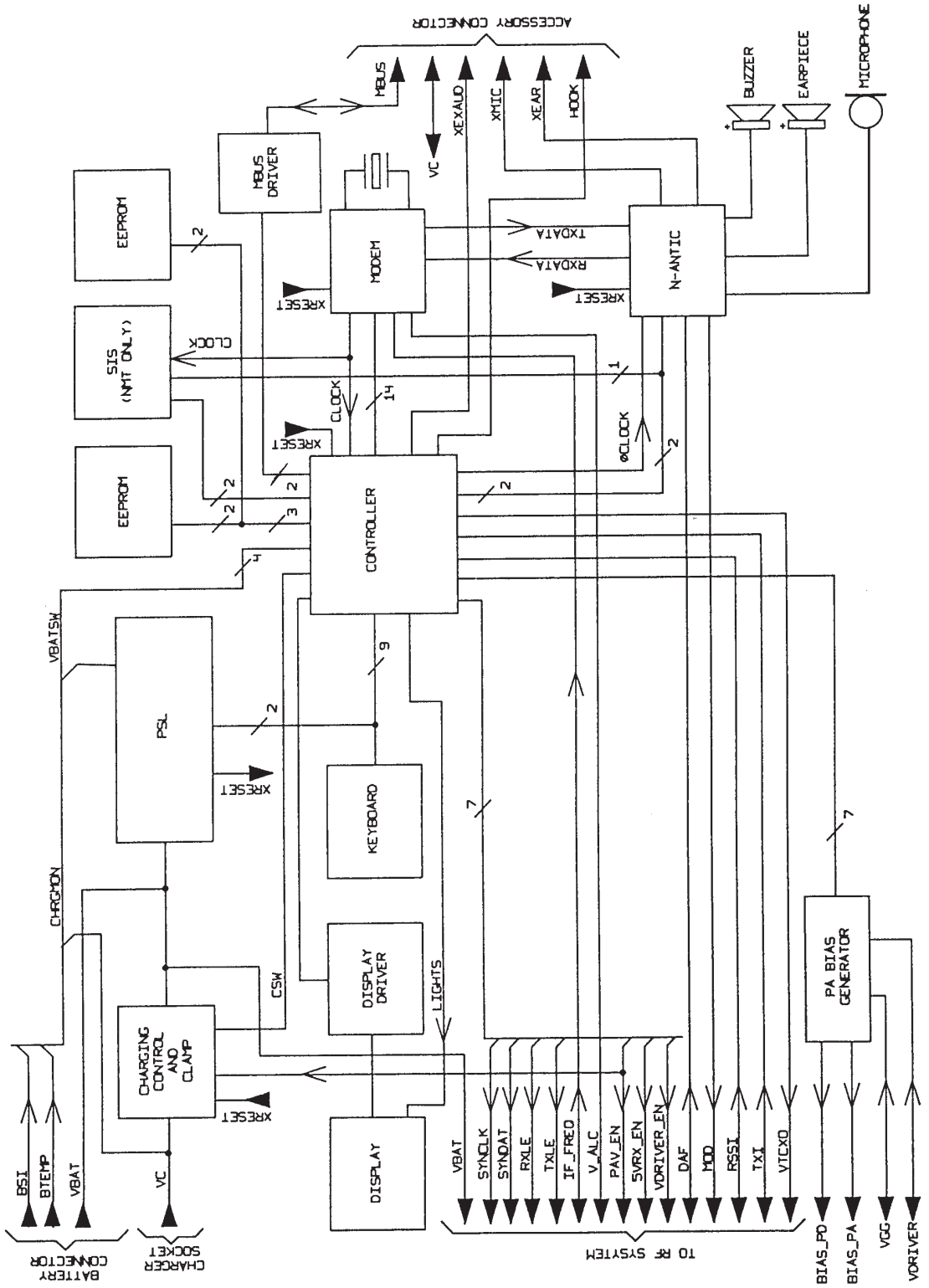


Figure 2: Baseband Block Diagram



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